

PERCEIVED BENEFITS BY THE FRINGE VILLAGER OF KAZIRANGA

NATIONAL PARK IN RESPECT OF ANIMAL HUSBANDRY

**BIJU BORAH¹, ATUL BORGOHAIN², L. SANATHOI KHUMAN³
GAUTAM BORDOLOI⁴, SADANANDA PAYENG⁵ & TASSO KONIA⁶**

¹Research Scholar, Department of Extension Education, College of Veterinary Science, Assam

Agricultural University, Khanapara, Guwahati, Assam, India

²Professor & Head, Department of Extension Education, College of Veterinary Science,

Assam Agricultural University, Khanapara, Guwahati, Assam, India

^{3,4}Assistant Professor, Department of Extension Education, Lakhimpur College of Veterinary

Science, Assam Agricultural University, Joyhing, North Lakhimpur, Assam, India

⁵Assistant Professor, Department of Extension Education, College of Veterinary Science,

Assam Agricultural University, Khanapara, Guwahati, Assam, India

⁶SRF, ICAR-NRC Onyak, Dirang, West Kameng District, Arunachal Pradesh, India

ABSTRACT

A survey was conducted in 4 selected forest range areas of Kaziranga National Park, namely Agoratoli range, Kohora range, Bagori range and Burapahar (Ghurakati range) to study the perceived benefits by the fringe villager in respect of Animal Husbandry. From the survey report, it was found that that 69 per cent of the respondents felt that they were getting low level of assistance from the govt. and forest authority for being in fringe villages. Among the respondents, 44 per cent of them did not utilize forest product and 49 per cent perceived medium level of benefit for their livestock rearing. The majority (72 per cent) of the respondents felt that their basic amenities facilities were somewhat better. However, 41 per cent of the respondents perceived low level of veterinary support and 62 per cent of them reported that they were getting low level of technical assistance and support from the BDO, Veterinary doctors, extension workers, NGOs, Forest department etc. In the multiple regression analysis between independent and dependent variable, it was found that education qualification of the respondents had significant contribution ($P < 0.01$) to the degree of benefits for livestock rearing in the fringe area.

KEYWORDS: Benefits, Fringe, Villagers, Kaziranga National Park & Animal Husbandry

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INTRODUCTION

Kaziranga National Park (KNP), a name known worldwide for its success in the conservation history of one horned Indian Rhinoceros, provides habitat for a number of threatened species and migratory birds. There are around 3000 Forest Fringe villages with a population of approx. 2, 34,113 nos. which are almost surrounding most of the protected area of the state including KNP. Some of the villages are still existed since the existence of the protected area. These settlements are agrarian in nature and livestock rearing is an integral part of their livelihood. In this region, people are poor, their livestock is hardy, but yields are poor, though the region is endowed with rich natural resources. From across the world, a colossal amount of money is being invested and spent for research and

development of the region in many spheres of life (Fonzo, 2007). In spite of such tremendous national and international thrust over the developmental issues of the region, basic minimum needs (water, health, transportation and communication) necessary for survival are hardly and difficultly accessed, pursued and availed by the rural fringe people of Kaziranga National Park. As of now, various studies have been done in the area of general sociology, archaeological, geographical and ecological aspects along with special emphasis on clinical areas, but less study has been done on the advantage or benefits perceived by the fringe villager of Kaziranga National Park in respect of Animal Husbandry. Therefore, the aforementioned investigation was conducted.

MATERIALS AND METHODS

This survey was undertaken to study the perceived benefits by the fringe villagers in respect of Animal Husbandry in 4 selected forest range areas of Kaziranga National Park, namely Agoratoli range, Kohora range, Bagori range and Burapahar (Ghurakati range). Basically, a purposive stratified random sampling technique was used for the study. From the 4 range areas, 5 villages were selected on a random basis. Subsequently, from each of the 5 villages, 20 numbers of fringe villagers were randomly selected making the sample size of 100. Data were personally collected by the researcher. Reliability of the interview schedule was worked out by conducting a pre-testing in the fringe villages of Pobitora Wildlife Sanctuary by using 'Test-retest' method and was found out to be $r = 0.89$. Further content validity was seen while preparing the final schedule. After collection, they were arranged accordingly and data were analyzed (Mean, Frequency, Standard Deviation, ANOVA and multiple regression analysis) and inferences were drawn accordingly.

RESULTS AND DISCUSSIONS

SOCIO- ECONOMIC PROFILE OF THE RESPONDENTS

Majority (58.00 per cent) of the respondents belonged to middle aged group (31-47 years) and had medium (4-5 nos) sized family. A good number (32.00 per cent) of them were belonging to schedule tribe caste followed by Other Backward caste (31%). Agriculture was the primary occupation for 66.00 per cent of them and had low levels of educational qualification. About, 77.00 per cent of them maintained medium (3-5 Cattle unit) herd size where, indigenous cattle are mostly preferred by them for rearing in those fringe areas. About 68 per cent of them possessed land holding up to 5 bighas and had medium annual gross family income (Rs. 38239- Rs. 70001). Cent per cent (100 per cent) of the respondents reared livestock, mainly for livelihood security, followed by Draught Purpose, Economic Purpose and Traditional Purpose. In the pooled sample, only 8 per cent of the total respondents were found to have social participation and the rest 92 per cent were not found to be active in any social participation, which reflected, a very low level of social participation among the respondents of Kaziranga fringe villages. Similar kind of observations was also reported by Das (2005) during his survey in the Sundarbans region of West Bengal.

PERCEIVING ASSISTANCE FOR BEING IN A FRINGE VILLAGE

Life in forest fringe village and life in other non forest villages somewhat differed in terms of getting assistance, rearing of livestock, transportation and other supports for their livelihood. However, from table 1, pooled sample revealed that the majority (69 per cent) of the respondents felt that they perceived low level of assistance from the govt., forest authority, etc., whereas only 31 per cent of the respondents felt that they perceived high level of assistance for being in a fringe village. From the Analysis of Variance, 'F' value was found to be 8.26 which revealed that there exists high significant difference among the villages in terms of getting assistance for being in fringe villages. This implied that those

areas which were near to a tourist spot, used to get better assistance than the other non tourist spot areas. These findings received support from the studies of Moosvi (2004).

Table 1: Distribution of Respondents on the Basis of Perceiving Assistance for Being in a Fringe Village

Settings	Low	Medium	High	Mean	S. D.	Range	‘F’ Value
Agoratoli-I Village	5 (25) [1≥]	13(65) [1.1-1.9]	2(10) [2≤]	1.85	0.59	1-3	
Agoratoli-II Village	15(75) [1≥]	0(0)	5(25) [2≤]	1.25	0.44	1-2	
Kohora Village	15(75) [1≥]	0(0)	5 (25) [2≤]	1.25	0.44	1-2	8.26**
Bagori Village	14(70) [1≥]	4(20) [1.1-1.9]	2(10) [2≤]	1.4	0.68	1-3	
Burapahar Village	20(100) [1≥]	0(0)	0(0)	1	0	1-1	
Pooled	69(69) [1≥]	0(0)	31(31) [2≤]	1.35	0.56	1-3	

Figures in parentheses indicate percentage.

** Significant at 0.01 level of probability

UTILIZATION OF FOREST PRODUCTS FOR THE LIVESTOCK REARING

Those villages which are nearer to the park were somehow utilizing forest product like fruits, fodders, fire wood, medicinal plants etc. for their livestock and also for themselves. Although it was illegal, but still some of the villages were there since long time and because of their having limited area, they were dependent on the forest product (Fonzo, 2007). It was revealed in the Table 2 that, the majority (60 per cent) of the respondents in Agoratoli-I and 20 per cent in Kohora were using much forest product for their livestock rearing whereas 40 per cent in Agoratoli-I, 60 per cent in Agoratoli-II, 80 per cent in Kohora and 10 per cent of the respondents in both Bagori and Burapahar utilized little forest product for their livestock. It was seen that, 40 per cent in Agoratoli-II and 90 per cent of the respondents in both Bagori and Burapahar were not utilizing forest product for their livestock. From the pooled, it was found that the majority (44 per cent) of the respondents did not utilize forest product and the rest 40 per cent and 16 per cent utilized ‘little’ and ‘much’ forest product for their livestock respectively. The present findings received support from the finding of Das (2005) and Hedge and Enters (2002).

Table 2: Distribution of Respondents on the Basis of Utilization of Forest Products for the Livestock Rearing

Settings	Very much	Much	Little	Not at all
Agoratoli-I Village	0(0)	12(60)	8(40)	0(0)
Agoratoli-II Village	0(0)	0(0)	12(60)	8(40)
Kohora Village	0(0)	4(20)	16(80)	0(0)
Bagori Village	0(0)	0(0)	2(10)	18(90)
Burapahar Village	0(0)	0(0)	2(10)	18(90)
Pooled	0(0)	16(16)	40(40)	44(44)

Figures in parentheses indicate percentage

DEGREE OF BENEFITS FOR THE LIVESTOCK REARING IN THE FRINGE AREAS

From the Table 3, it was found that, in all the five fringe villages, the respondents were getting different levels of benefits in livestock rearing like fodder, tree leaves, free areas, etc. In Agoratoli-I and II, 40 per cent and 45 per cent of the respondents perceived low and medium level of benefits respectively whereas, in Kohora, the majority (50 per cent) of the respondents perceived low level of benefits. However, in Bagori majority (50 per cent) were perceiving medium levels of benefits while on a Burapahar equal number (40 per cent) of the respondents perceived medium and high level of benefits for their livestock rearing in the fringe areas. In the pooled sample it was seen that the majority (49 per cent) of the respondents were perceiving medium level of benefits, whereas the rest 33 per cent and 18 per cent perceived low and high level of benefits regarding livestock rearing in the respective fringe areas respectively. The resultant 'F' value was found to be 29.52 which attain the high statistical level of significance at the 1 per cent level of probability. This indicated that there existed a variation in the location of the fringe villages from the forest territory. Obviously, the villagers located nearer to the forest territory could avail benefits like fodder, tree leaves, free areas, etc. to a greater extent than those located less away.

Table 3: Distribution of Respondents on the Basis of Degree of Benefits for Livestock Rearing in Fringe Areas

Settings	Low	Medium	High	Mean	S. D.	Range	'F' Value
Agoratoli-I Village	8(40) [7≥]	8(40) [8-9]	4(20) [10≤]	8.4	1.54	7-11	
Agoratoli-II Village	9(45) [6≥]	9(45) [7]	2(10) [8≤]	6.65	0.67	6-8	
Kohora Village	10(50) [8≥]	6(30) [9]	4(20) [10≤]	8.8	1.15	7-11	29.52**
Bagori Village	2(10) [5≥]	10(50) [6]	8(40) [7≤]	6.3	0.66	5-7	
Burapahar Village	4(20) [5≥]	8(40) [6]	8(40) [7≤]	6.2	0.77	5-10	
Pooled	33(33) [6≥]	49(49) [7-9]	18(18) [9≤]	7.27	1.49	5-11	

Figures in parentheses indicate percentage.

** Significant at 0.01 level of probability

BASIC AMENITIES FACILITIES

It was depicted in the Table 4 that in the pooled sample majority (72 per cent) of the respondents felt that basic amenities like health care, education, electricity, road and social participation, etc., were somewhat better, while 19 percent of the total respondents felt that they had better basic amenities and only 9 per cent felt that basic amenities in their respective areas were poorer than the other fringe areas. The reasons might be due the geographical location, water based conveyance with muddy roads, etc. seemed as the main reason behind the process of delayed development. Construction and maintenance of brick roads and embankments, supply of electricity were some of the important development challenges in the study area. Similar findings were reported by Das, 2005.

Table 4: Distribution of Respondents on the Basis of Basic Amenities Facilities

Settings	Very Much	Better	Some what	Not at all
Agoratoli-I Village	0(0)	0(0)	15(75)	5(25)
Agoratoli-II Village	0(0)	5(25)	15(75)	0(0)

Table 4: Contd.,				
Kohora Village	0(0)	6(30)	10(50)	4(20)
Bagori Village	0(0)	4(20)	16(80)	0(0)
Burapahar Village	0(0)	4(20)	16(80)	0(0)
Pooled	0(0)	19(19)	72(72)	9(9)

Figures in parentheses indicate percentage.

** Significant at 0.01 level of probability

VETERINARY SUPPORT

Table 5 revealed that the majority (75 per cent in Agoratoli-I, 60 per cent in Agoratoli-II, 65 per cent in Bagori and 80 per cent in Burapahar) of the respondents perceived medium level of veterinary support in terms of treatment, vaccination, training programmes etc. But in Kohora, the majority (55 per cent) of the respondents perceived high level of veterinary support whereas the rest 45 per cent of the respondents perceived low level of veterinary support. Pooled sample revealed that the majority (41 per cent) of the respondents perceived low level of veterinary support, whereas 40 per cent perceived medium level of veterinary support and the rest 19 per cent of the respondents perceived high level of veterinary support. The ‘F’ value 47.91 from analysis of variance exhibited that, there was high significant difference among the respondents of five villages in terms of veterinary support which indicated that, the villages which were nearer to a tourist spot or near to veterinary dispensary perceived better veterinary support or services in comparison to those located far from a tourist spot or a veterinary dispensary (Ledger, 2009). Another reason might be that, some villages were close to the highway and had better transportation facilities and communication services which let to their perception of better veterinary support than those located far away from the highway.

Table 5: Distribution of Respondents on the Basis of Veterinary Support

Settings	Low	Medium	High	Mean	S. D.	Range	‘F’ Value
Agoratoli-I Village	5(25) [8≥]	15(75) [8.1-8.9]	0(0)	8.75	0.44	8-9	
Agoratoli-I Village	0(0)	12(60) [9.1-9.9]	8(40) [10≤]	9.4	0.5	9-10	
Kohora Village	9(45) [9≥]	0(0)	11(55) [10≤]	9.55	0.51	9-10	7.91**
Bagori Village	5(25) [7≥]	13(65) [8-8.4]	2(10) [8.5≤]	7.85	0.59	7-9	
Burapahar Village	2(10) [7≥]	16(80) [7.5-8.45]	2(10) [8.46]	8.0	0.46	7-9	
Pooled	41(41) [8≥]	40(40) [9]	19(19) [10≤]	8.71	0.86	7-10	

Figures in parentheses indicate percentage.

** Significant at 0.01 level of probability

TECHNICAL SUPPORT AND ASSISTANCE FOR REARING LIVESTOCK

A glance at the Table 6 revealed that in Agoratoli-I, Kohora and Bagori, majority (55 per cent, 45 per cent and 70 per cent respectively) of the respondents were getting low level of technical support and assistance which include technical support and assistance from BDO, Veterinary doctors, extension workers, NGOs, Forest department etc. whereas, in Agoratoli-II and Burapahar majority (75 per cent and 65 per cent) of the respondents perceived medium level of technical

support and assistance. However, 45 per cent in Agoratoli-I, 25 per cent in Agoratoli-II, 40 per cent in Kohora, 30 per cent in Bagori and 35 per cent of the respondents in Burapahar got high level of technical support and assistance. In the pooled sample it was seen that the majority (62 per cent) followed by 26 per cent and 12 per cent of the respondents was getting low, medium and high level of assistance and support respectively from the above mentioned categories. The findings were more or less similar to that of Kalita (1997). The calculated 'F' value from Analysis of variance was found to be 3.953 which indicated that with regards to degree of assistance and supports, the respondents of the five villages differed significantly. It might be due to the fact that the fringe villages were at a varying distance range from the office of BDO, veterinary dispensary etc. So those villages which were nearer to the town or roadside and with a minimum distance range perceived more assistance and support than those of remote fringe villages.

Table 6: Distribution of Respondents on the Basis of Degree of Technical Support and Assistance for Rearing Livestock

Settings	Low	Medium	High	Mean	S. D.	Range	'F' Value
Agoratoli-I Village	11(55) [7≥]	0(0)	9(45) [8≤]	7.65	0.81	7-9	
Agoratoli-II Village	0(0)	15(75) [6.8-7.68]	5(25) [8≤]	7.25	0.44	7-8	
Kohora Village	9(45) [7≥]	3(15) [8]	8(40) [9≤]	7.95	0.94	7-9	3.953**
Bagori Village	14(70) [7≥]	0(0)	6(30) [8≤]	7.3	0.47	7-8	
Burapahar Village	0(0)	13(65) [7.1-7.9]	7(35) [8≤]	7.35	0.49	7-8	
Pooled	62(62) [≥]	26(26) [7.1-8.1]	12(12) [8.2≤]	7.5	0.7	7-9	

Figures in parentheses indicate percentage.

** Significant at 0.01 level of probability

MULTIPLE REGRESSION ANALYSIS BETWEEN INDEPENDENT AND DEPENDENT VARIABLE

As indicated in Table 7, out of 9 independent variables, education was found to have significant contribution ($P < 0.01$) to the degree of benefits for livestock rearing in the fringe area. All the remaining variables *viz.* age, family size, land holding, herd size, years of dwelling, annual family income, annual family income from A. H. And veterinary support fails to contribute significantly to the dependent variable, i.e. degree of benefits for livestock rearing in the fringe area. The co-efficient of multiple determinations (R^2) with 9 independent variables could explain 22 per cent variation in the degree of benefits for livestock rearing in the fringe area. The 'F' value for R (3.216, $P < 0.01$) was found to be highly significant. A person with higher education would be aware of his surroundings and situation. He would be able to derive better benefits for the livestock rearing than those having less educational level. This kind of apprehension was also expressed by Das, 2005.

Table 7: Multiple Regressions Between Independent Variable and Degree of Benefits for Livestock Rearing in the Fringe Areas of KNP

Independent Variable	Variable no	Regression coefficient b value	‘t’ value for b	X ²	F’ value for R
Age	X ₁	.017	.869	0.220	3.216**
Educational status	X ₂	.528**	3.620		
Family size	X ₃	-.023	-.193		
Years of dwelling	X ₄	-.003	-.4		
Land holding	X ₅	.026	.260		
Herd size	X ₆	.235	1.655		
Annual family income From A. H.	X ₇	-9.06E-005	-2.123		
Annual family income	X ₈	1.18E-006	.094		
Veterinary support	X ₉	.129	.241		

** Significant at 0.01 level of probability

CONCLUSIONS AND IMPLICATIONS

The study concludes that Livestock rearing can be an alternative livelihood for the villagers provided that there is a remunerative well networked market, demand and by providing appropriate facilities and services by the govt. and forest departments. This issue needs serious attention and investigation to do the needful, as early as possible. The socioeconomic life of the people in the villages was traditionally somewhat devoid of basic amenities like health care, education, electricity, road and social participation, etc. Construction and maintenance of brick roads and embankments, supply of electricity were some of the important development challenges in the study area. Lack of proper veterinary services and other managerial services by the Government (BDO, Forrest department, etc.) aggravated the healthy animal husbandry in the fringe areas. A thorough appraisal of the objectives under study enables to act strategically with tactics dealing with the situation pragmatically. The study is expected to lay the foundation stone for further scientific study focusing on animal husbandry as an alternative livelihood based on the participatory approach with rigorous quantification and prediction and by providing basic facilities to the fringe villagers for their livelihood benefits. Extension education programmes thus formulated with plan and calendar of work, objectives, goals and aims thus prepared can bring desirable changes for the betterment of the fringe villagers in our countryside, if implemented diligently and conscientiously. Thus the findings may help the Kaziranga fringe villages Development Board, Assam, besides other non-government organizations in designing and implementing livestock and livelihood development programmes on a pilot basis for the study villages where poverty, backwardness and rich resources paradoxically coexist.

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